

watershedfocus

Fall 2000

New Jersey Department of Environmental Protection

what's in focus

- ① **More Progress in Watershed Management** - Contracts with regional agencies signed
- ③ **Make a Splash with Project WET** - Watershed Education for Teachers and students participate in water festivals
- ④ **BMP Basics** - More than just engineering
- ⑥ **Wildlife & Watersheds** - You can protect both watersheds and wildlife
- ⑧ **Rahway Restoration** - Partnership effort at Rahway River Park
- ⑩ **Woolman Lake Restoration Project** - Mt. Holly Partnership installs buffer along lake
- ⑪ **Get to Know Your Watershed** - Northeast workshops a success

"With Cumberland and Salem counties working together with other participating organizations, the public and DEP, we will produce a plan that will enhance the high quality waters of the Cohansey, Maurice and Salem rivers. These rivers and their tributaries are vital to the area's environment and economy and must be protected," Shinn said. Cumberland County was awarded the contract to coordinate development of the watershed management plan for the area.

DEP Contracts with Regional Agencies to Develop Watershed Plans

Throughout the summer and fall, Department of Environmental Protection (DEP) Commissioner Bob Shinn has been presenting contracts to regional agencies to develop comprehensive management plans for clean and plentiful water for New Jersey's watershed management areas. In order to facilitate the watershed management planning process, the DEP has contracted with county or other regional entities in most of the twenty watershed management areas. The role of the contract agency is to facilitate the process by providing administrative support rather than actually leading the process. These agencies work closely with the managers and staff in the DEP Division of Watershed Management who oversee the process and ensure equitable representation and participation.

These regional entities will work with planning boards, municipalities, watershed associations and interested members of the community to establish an executive committee. The executive committee will seek input from other local groups and interested citizens in developing the watershed management plan. Task committees will be formed for public outreach and other technical and support work. Upon completion of a draft plan, DEP will seek formal public comment and review prior to adoption.

(DEP Contracts continued on page 2)




watershed *focus*

is a publication concentrating on watershed management, stormwater and nonpoint source pollution management issues in New Jersey. Send comments and subscription requests to:

New Jersey Department of
Environmental Protection
Environmental Planning and Science
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-292-2113
khoffman@dep.state.nj.us
www.state.nj.us/dep/watershedmgt

Christine Todd Whitman, Governor
Robert C. Shinn, Jr., Commissioner
Robert Tudor, Deputy Commissioner
Lance Miller, Director
Kyra Hoffmann, Editor
Erin Brodel, Designer
Contributors:
Sandy Blick, Kim Cenzo, Gary Christensen,
Amanda Dey, Danielle Donkersloot,
Jennifer Gurdak & Trish Ingelido

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DEP Contracts

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Watershed management is an inclusive process that develops a plan for a given watershed taking into account all potential point and nonpoint sources of water pollution. Examples of point sources of pollution are wastewater discharges from sewage treatment plants and industrial facilities. Examples of nonpoint sources of pollution, in turn, are fertilizers, pesticides, motor oil, metals and animal waste washed into waterways by stormwater runoff or entering these waterways via atmospheric deposition. New Jersey has been divided into 20 watershed management areas, each of which is developing a watershed management plan.

This watershed management planning process is already well underway in the Barnegat Bay area (Watershed Management Area 13) through the Barnegat Bay Estuary Program, and in the Raritan River Basin (WMA 8, 9 and 10) with the New Jersey Water Supply Authority as the lead. The Walkill River Area (WMA 2) and Lower Delaware Tributaries (WMA 18) began the process in the spring of this year as contracts were signed with agencies in these areas. Contracts were signed for the Upper Delaware River (WMA 1), Central Delaware Tributaries (WMA 11), Monmouth Watersheds (WMA 12), Mullica River (WMA 14), Great Egg Harbor River (WMA 15), and Maurice, Salem and Cohansey Rivers (WMA 17) over the summer and fall. The remaining watershed management areas have already had initial meetings with local interests and will have contracts in place by the end of December 2000.

(DEP Contracts continued on page 3)

WATERSHED MANAGEMENT AREAS

REGIONAL CONTRACT AGENCIES

1	Upper Delaware River	North Jersey Resource Conservation & Development
2	Walkill River, Pochuk and Papakating Creeks	Sussex County Municipal Utilities Authority
3	Pompton, Wanaque and Ramapo Rivers	North Jersey District Water Supply Commission
4	Lower Passaic and Saddle Rivers	North Jersey District Water Supply Commission
5	Hackensack, Passaic and Hudson Rivers	Bergen County
6	Upper Passaic, Whippany and Rockaway Rivers	North Jersey District Water Supply Commission
7	Elizabeth, Rahway and Woodbridge Rivers	Union County
8	North and South Branch Raritan Rivers	New Jersey Water Supply Authority
9	Lower Raritan, South River and Lawrence Brook	New Jersey Water Supply Authority
10	Millstone River	New Jersey Water Supply Authority
11	Central Delaware Tributaries	Regional Planning Partnership
12	Monmouth Watersheds	Monmouth County
13	Barnegat Bay Watersheds	Ocean County
14	Mullica River	Pinelands Commission
15	Great Egg Harbor River	Atlantic County
16	Cape May Watersheds	Cape May County
17	Maurice, Salem and Cohansey Rivers	Cumberland County
18	Lower Delaware Tributaries	Delaware Valley Regional Planning Commission
19	Rancocas River	Burlington County
20	Assiscunk, Crosswicks and Doctors Creeks	Delaware Valley Regional Planning Commission

DEP Contracts

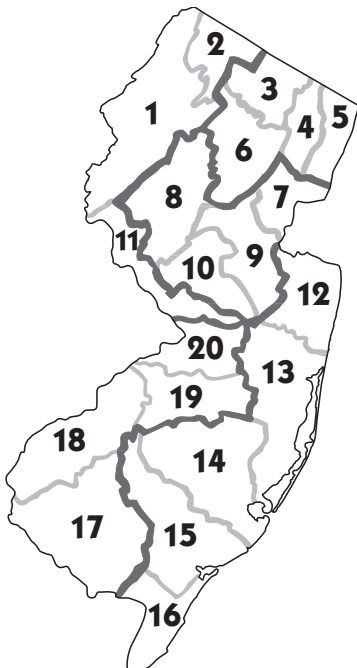
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While the NJDEP regulates sewage treatment plants and industrial facilities through permitting programs, a major component of the watershed plans focuses on nonpoint pollution sources, which will require other entities, both public and private, to do their part. Both the planning and implementation process involves the participation of a wide variety of stakeholders including watershed associations, water purveyors, farmers, businesses, industry, environmental organizations, local and county government, and concerned citizens.

Watershed management will be implemented through a variety of options. These can be improvements to municipal land use ordinances, open space acquisition, stormwater basin retrofitting, stream bank restoration, permitting changes, education programs, and other options. Funding is available to address many of these options. For example, Action Now funding is now available for projects that can be easily implemented and have an obvious water quality benefit. Funding also is available for open space acquisition through the Environmental Infrastructure Trust and Green Acres Program.

The Water Quality and Watershed Management Rules, which are currently proposed by the NJDEP, will help define the watershed management process itself and the relationship between watershed management plans and existing water resources regulatory programs in New Jersey. These include existing Wastewater Management Plans and Water Quality Management Plans.

NEW JERSEY'S 20 WATERSHED MANAGEMENT AREAS



NEW JERSEY'S WATER FESTIVALS

On September 22, 2000 more than 800 students in New Jersey participated in three "Make a Splash with Project WET Water Festivals" as part of the National Project WET Water Education Day. Across the nation in all 50 states, simultaneous water festivals for students were held to raise students' awareness about the importance and value of water in their every day life.

Sponsored nationally by the Perrier Group of America (Poland Springs Water), each student received a t-shirt, water journal, story book about spring water, ruler, recycled denim pencil and bottle of Poland Springs water. Each water festival is different but the overall goal is to have students participate in several lessons or games that explore the science and history of water.



In New Jersey, the Youth Environmental Society (YES) received the \$3,000 grant to sponsor a water festival. The grant was extended and two Project WET facilitators were awarded a \$500 grant to sponsor their own festival: Kelly Malloy with the Greater Newark Conservancy for a Water Festival at Oliver Street School in Newark and Margaret Morales for a Water Festival at Washington Street School in Plainfield where she teaches.

BEST MANAGEMENT PRACTICES (BMPs)

GOALS OF STORMWATER MANAGEMENT

- Reduce flood damage from development
- Reduce soil erosion from construction and development
- Induce recharge to groundwater
- Prevent increases in nonpoint source pollution
- Maintain the ecological integrity and functionality of streams

WHAT IS A BEST MANAGEMENT PRACTICE (BMP)?

BMPs are methods to achieve nonpoint source pollution and runoff quantity control in the management of stormwater. They can be structural, or non-structural, integrated throughout the design of the project, or placed at the end of the project where runoff is often collected. BMPs function in several different ways, and can be combined to provide a more effective treatment of the stormwater. Nonstructural BMPs are a good way to minimize the impacts of runoff in urbanizing areas and include education and planning, actions that can be taken to reduce nonpoint source pollution that is generated. In addition, structural BMPs can be placed to remove or prevent pollutants in stormwater through filtration, settling, uptake, buffering, and stabilization.

EDUCATION: Education is the most basic BMP, and can be a preventative measure, or a restorative measure. Public awareness of issues that impact our waters may significantly reduce the need for other BMPs. Awareness that inlets discharge to streams is important in preventing them from being used to dispose of oil, or other garbage. By effectively managing pet waste, pollutants can be prevented from entering our waters. By properly applying pesticide and fertilizers, we can reduce their impact on our waters. In an effort to educate the public, we provide brochures, training, and manuals to assist in addressing and treating nonpoint source pollutants.

PLANNING: The Department believes that it is critically important to integrate stormwater management early into the development of the planning process to prevent potential pollution problems efficiently and cost effectively. ¹ This process can take place on a county or municipality level, where the master plan takes into account its environmental goals. It can take place on a site to protect sensitive environmental areas, or to take advantage of existing forested areas in site layout planning. It can be a joint effort between a regulatory agency and a developer, such as cluster developments, where benefits to both agencies are gained.

SETTLING: The most common way of treating stormwater is through settlement. These come in many forms, such as detention and retention basins, sedimentation basins, and even some inlets. Water is placed in a holding chamber, and is slowly discharged, greatly reducing the velocity. This process drops out sediments preventing them from entering the water. In addition, pollutants that attach themselves to the sediment (adsorption) are also left in the structure. Maintenance is necessary to dispose of accumulated sediment.

FILTRATION: Filtration systems require water to pass through a filter media that will remove the pollutants of concern. Vegetated filter strips receive sheet flow and treat the runoff before entering the stormwater system or stream. A sand filter allows water to percolate through the sand before entering the stream or wetlands, trapping pollutants in the upper layers of sand. There are additional media which can be used, and more are being developed to target specific pollutants.

UPTAKE: In addition to filtration, vegetation can remove pollutants through uptake. Root systems remove pollutants from the runoff and process them within the vegetation. This method of pollutant removal can be very effective with soluble pollutants.

BUFFERING: Buffers to streams and lakes provide several water quality benefits, such as filtration and cooling. When development occurs, runoff from impervious areas result in raising the water temperature. Heated water can be detrimental to aquatic life. Forested buffers provide a tree canopy that provides shade for heated water in streams. In addition, buffers can also be used to manage geese, which contribute waste to the surface waters.

STABILIZATION: Stabilization practices vary in their size, shape, and application. Some practices provide a flat apron to reduce the velocity of water from a pipe and to prevent erosion downstream. Others address an existing condition such as bank erosion. Through the stabilization of soils, additional solids and attached pollutants are prevented from being added to a stream system. An overabundance of sediment can cause scouring and additional erosion, or suffocation of aquatic life.

(See future Watershed Focus for BMP Success Stories and additional practice guidance.)

For additional information on Best Management Practices, please visit our website at www.state.nj.us/dep/watershedmgt. For additional information regarding soil erosion and stabilization, please refer to the Standards for Soil Erosion and Sediment Control in New Jersey, available at your local Soil Conservation District.

¹ Revised Manual for New Jersey Best Management Practices for Control of Nonpoint Source Pollution from Stormwater, Fifth Draft, May, 2000.



Stream with vegetated and armored stabilization.

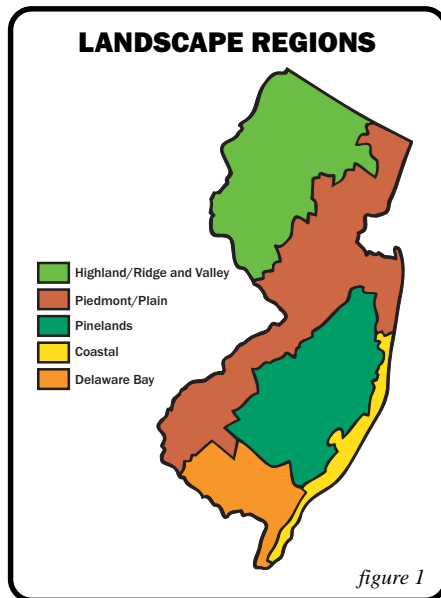
Stream with buffer.



The Landscape Project – Critical Wildlife Habitat Meets Watersheds



Bog Turtle (*Clemmys Muhlenbergi*) - status: ENDANGERED



Bald Eagle (*Haliaeetus leucocephalus*) - status: ENDANGERED

Background and Strategy:

New Jersey is the most densely populated state in the nation. As the population grows, we continue to lose and impact the remaining natural areas of the state. In 1994, the NJ Division of Fish and Wildlife's Endangered and Nongame Species Program (ENSP) adopted a landscape-level approach to rare species protection. The goal of The Landscape Project is to protect New Jersey's biological diversity by maintaining and enhancing rare wildlife populations within healthy, functioning ecosystems.

As more habitat is lost, we are beginning to appreciate the benefits, and necessity, of maintaining land in its natural state. Natural areas, including forests, grasslands, and wetlands, protect ground and surface water quality, facilitate the breakdown of contaminants, lessen flood damage, cleanse the air we breathe, and provide important areas for outdoor recreation – natural areas are vital to our health and quality of life. Collectively, these same habitats are of critical importance to the diverse assemblages of wildlife found in New Jersey, including more than 60 species that are classified as threatened or endangered.

Since many animals require large expanses of natural habitat for their long-term survival, The Landscape Project focuses on landscape regions that have ecologically similar plant and animal communities (Figure 1). Using an extensive database that combines rare species location information with land use/land cover data, the ENSP has identified and mapped areas of critical habitat for rare species within each landscape region.

The Project's protection strategy begins with already-conserved land areas, such as publicly owned areas and regulated wetlands. By identifying and protecting critical habitats adjacent to these conserved areas, large, contiguous blocks of habitat will be protected. The Landscape Project has identified critical wildlife habitats that must be preserved if we are to assure the conservation of New Jersey's biological diversity for future generations.

Critical Wildlife Habitat and Watershed Management:



Often, the habitat requirements of rare wildlife and the natural areas required to preserve water quality are the same. In consequence, the goals of habitat and water quality protection are synergistic. Information provided through the Landscape Project will be considered by the Public Advisory Committees of each Watershed Management Area when making recommendations regarding land acquisition.

ENSP biologists are collaborating with the Division of Watershed Management to incorporate critical wildlife habitat data into the watershed management process. The major tasks are: 1) develop landscape measures, derived from critical habitat mapping, that can be used to assess the current status of Watershed Management Areas (WMA's) in terms wildlife habitat, 2) develop goals for long-term improvement of wildlife habitat, and 3) identify wildlife and habitat indicators that can be used to evaluate long-term goals and monitor interim improvement.

ENSP biologists and Watershed Teams have tackled Task #1. We have developed several intuitive measures, based on critical habitat mapping, that quantify the extent and distribution of critical habitats in watersheds, quantify how much critical habitat is already protected, and identifies areas that are most important for acquisition, conservation, and enhancement efforts.

Watershed Teams have reviewed the proposed landscape measures, and we are incorporating their comments into an assessment methodology. ENSP biologists will apply this method to pilot Watershed Management Areas, one from each watershed region. Once completed, Watershed Teams and ENSP staff will meet to review the assessments to develop goals for the conservation and improvement of critical wildlife habitat (Task #2).

Bobcat
(*Felis rufus*)
status:
ENDANGERED



Eastern Tiger Salamander
(*Ambystoma t. tigrinum*)
status: ENDANGERED

Geographical Information Systems (GIS) Products:

1

Critical Wildlife Habitat Mapping:

Critical wildlife habitat mapping is a georeferenced, digital coverage that can be used with ArcView 3.0 or better. The critical habitat coverage is a stand-alone product that can be overlaid with other digital layers such as soils, open space, etc., and can be used at any scale (e.g., watershed, municipality, county, landscape region, state). This product will be available as an interactive map and downloadable coverage through the DEP web site in fall 2000;

www.state.nj.us/dep/fgw/ensphome.htm

2

Watershed Assessment for Wildlife:

the proposed assessment will consist of a matrix of landscape measures and a graphic component. The graphic will identify and rank areas within watersheds in terms of critical habitat value for wildlife, and together with the landscape measures, will delineate areas where improvement efforts could be focused.

For more information, please contact Amanda Dey, Endangered and Nongame Species Program, Trenton, NJ, (609) 292-1993 or adey@dep.state.nj.us.

Rahway River Park Benefits from Lakeside Restoration Project

Streamside Buffers Benefit Rivers, People and Wildlife

Planting trees and other vegetation not only stabilizes the streambank but it also creates a riparian buffer.

A riparian buffer is a streamside swath of vegetation along the river's edge, also known as the riparian zone. A riparian buffer filters pollutants, such as manure, sediment, excess fertilizers or pesticides, from stormwater before entering the stream or lake. Aquatic species, such as trout, benefit from the shading effects of mature trees.

This canopy of shade reduces the water temperature, which improves in-stream habitat. These habitat improvements enhance the aesthetic and recreational qualities of the stream, lake or other waterway.



Cranford - Rahway River 3/9.

The Rahway River travels through Rahway River Park, a 133-acre unit of the Union County Park system, and is connected to a six-acre lake by a spillway. The Park is a popular spot to picnic and walk for the residents of Rahway City, yet these are not the only residents using the park's resources. It is also home to hundreds of Canada Geese and Mallard Ducks whose populations far exceeds the lake's ability to process their waste. This river has suffered all the conditions that are typical of urbanized watersheds: intense development, untreated stormwater that flows directly into the river, and overused waterside parks with large populations of waterfowl. Urbanization of the Rahway River has lead to many documented water quality issues: an eroding lakeshore, the lawn being eaten by geese, and the goose waste washing into the lake raised the nutrient and bacteria levels. The water quality problems effected not only those residents who used the Rahway River Park for Recreation also all residents of Rahway City, for whom the Rahway River is the source of drinking water.

The Union County Division of Parks, Rahway River Association, and Baykeeper NY/NJ Harbor asked the Urban Conservation Action Partnership (UCAP) to help restore the health and appearance of Rahway River Park. In July 1998, the New Jersey Department of Environmental Protection awarded UCAP a grant to fund restoration of more than 22,000-sq. ft. of lakefront and 750 feet of shoreline UCAP worked with the Union County Division of Parks to create a landscape plan, to recruit volunteers for landscape installation, and to maintain plantings. A 1-acre lake edge site was identified for the planting of native trees, shrubs, vines, wildflowers and tall grasses. UCAP's landscape architect and the Union County Division of Parks took



Volunteers work on a streamside buffer project in Rahway. Educating the public about the project is part of its overall success.

great care to select native plants that would deter geese, but be sufficiently low-growing to provide security and lakeside views to park patrons. In order to determine if the landscape project impacted water quality, UCAP performed baseline water quality monitoring before installation and will also monitor the project after the landscape has become established.

In the spring of 1999, volunteers and park staff planted a buffer of over 300 native trees and shrubs around the perimeter of the lake. Students from Rahway High School and Bishop Ahr School, and employees of Merck were among the volunteer who participating the phase I planting . Temporary fencing was also installed to protect the new planting from geese and humans.

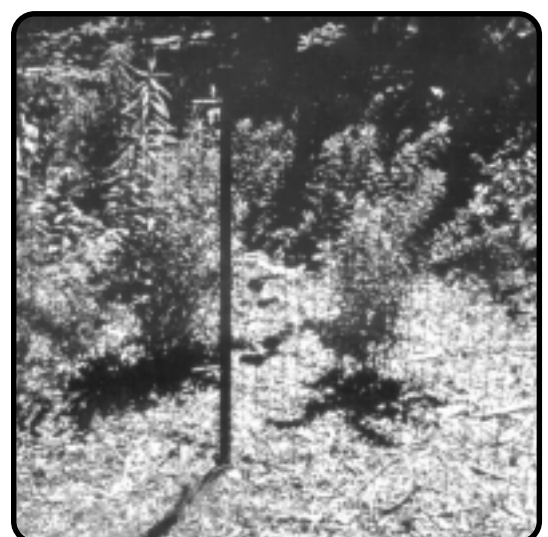
In summer 1999, intense heat and drought conditions set the stage for a potential disaster. Yet, the heavy mulching and the adequate watering by the Union County Parks Staff averted a disastrous die-off. On June 16 1999 UCAP, Union County Parks staff and volunteers planted tallgrass/ wildflower seed mix on nearly 5000 square feet of the site. By Fall it was obvious that despite the drought, the plantings had survived the first summer season with flying colors. Only a few plants were lost.

Phase II of the project began in April 2000. Additional volunteers, including a local Girl Scout Troop assisted in planting additional native shrubs as well as herbaceous wetland species, extending the vegetated water quality buffer further around the lake. The native plants look beautiful, arrest erosion, discourage geese, and filter pollutants from stormwater before they enter the lake increasing not only the water quality of Rahway River but also the quality of life for the citizens of Rahway City.

Rahway River
Park, Rahway-
July 1999

Photo 1 -
(right)
Before lakeside
restoration

Photo 2 -
(far right)
After lakeside
restoration



PARTNERSHIP IMPROVES WOOLMAN LAKE IN MOUNT HOLLY

Woolman Lake is a 2-acre lake within 9 acres of land owned by Mount Holly Township. The park surrounding the lake is sandwiched between residential areas, and is used by the residents for passive recreation such as walking, jogging, picnicking and even fishing. During heavy rains, stormwater flows into the lake carrying unwanted pollutants such as fertilizers, pesticides automobile fluids, pet and geese waste and sediments. Due to this polluted runoff, Woolman Lake experiences many water quality problems. The sediment and the chemicals impair the aquatic life, cause algal blooms, destroy the lake bottom habitat, and threaten the overall health of the lake.

The Department of Environmental Protection (DEP) provided an \$83,000 grant to the Heritage Conservancy, in partnership with the Delaware Riverkeeper, Omni Environmental Corporation, the Rancocas Conservancy, Mount Holly Township, Burlington County Soil Conservation District, and the U.S. Fish and Wildlife Service, for the Lakeside Restoration Project. The grant provided funding for the stabilization of eroded stream banks and the creation of a riparian buffer area in order to increase wildlife habitat and decrease nonpoint source pollutants entering the lake.

The Woolman Lake Restoration Project had four main objectives: Inventory of the sources of NPS pollution, restore selected sites, educate the public, and provide pre and post-construction monitoring. During the inventory of NPS pollution, baseline water quality data was needed. This sampling data was obtained with the assistance of volunteers under the direction of the Delaware River Keeper.

Selected sites were targeted for restoration. Bioengineering was utilized along the water's edge, using native seed mixes and annual grasses to stabilize the bank. Biologs and erosion control mats provided temporary stabilization until the root system was established.

Another site was selected for a riparian buffer. Care was taken to choose the appropriate native plants and shrub

species by using a reference site within the Rancocas Watershed. Phase I of the planting occurred in spring of 1999, when 500 ft. of lake was planted by 269 volunteers from 4 area high schools, the Mount Holly Garden Club, and the Big Sister/Big Brother programs of Camden and Gloucester Counties. In the fall of 1999, Environmental Design students from Delaware Valley College in Doylestown, PA, volunteers from local high schools and the Burlington County VoTech School, participated in Phase II of the planting which involved three sites surrounding the lake. Native grasses and shrubs were planted along the perimeter of the lake to improve water quality and create a vegetated shoreline that requires minimal maintenance. Volunteers assisted in regrading an eroding slope at a nearby storm sewer outflow pipe and redesigning vegetation at a parking lot and fishing area.

The third objective of the project was public education on the impacts development as on watersheds and the effects of NPS pollution on water quality. Flyers and educational handouts were distributed, and an educational sign that was placed at the restoration site. The sign will educate all those who visit the site about the harmful effects of NPS pollution and provide an explanation of the control measures used in the project area.

The final objective of the project was post restoration monitoring by volunteers to determine the improvements in water quality. Ten volunteers were trained through the Delaware River Keeper to conduct bio monitoring up and down stream of Woolman Lake to determine its health.

The Woolman Lake restoration project was performed through the partnership of seven organizations and the work of over 250 volunteers who completed the restoration of nearly 1,000 feet of shoreline. It is a project that will serve not only as a model offering vegetative measures of stabilization, but also as an example of how much can be accomplished when people work together.

Getting to Know the Watersheds of the Northeast Region

The Division of Watershed Management's (DWM) Northeast Bureau conducted two Watershed Awareness Seminars this summer to acquaint our stakeholders with watershed management and the public participation process for Watershed Management Areas 3, 4, 5 and 6. The seminars were designed to provide information to enable future stakeholders to become informed and active watershed partners. Several interactive exercises allowed participants to discover in which watersheds they live and work. Approximately 100 people attended the seminars and agreed that it was essential for watershed partners to "get to know their watershed".

The DWM is contracting with the North Jersey District Water Supply Commission (NJDWSC) to serve as the lead entity for watershed management area planning in WMAs 3, 4 and 6 in partnership with the Passaic River Coalition, Passaic Valley Water Supply Commission, Palisades Interstate Park Commission and the Passaic River Basin Alliance. The Bergen County Department of Health Services will lead the watershed management area planning process for WMA 5. Both organizations will be awarded a two-year grant agreement to:

- Organize a Public Advisory Committee (PAC) and Technical Advisory Committee (TAC) in each WMA and/or to Support the Existing PAC and TAC in WMA 6.
- Identify Watershed Goals and Objectives Through a Visioning Process.
- Develop and Implement a Nonpoint Source Action Now Agenda.
- Identify and Map Open Spaces for Acquisition.
- Create an Education and Outreach Program.
- Identify Supplemental Reference Stations to Monitor Water Quality for each WMA.

Commissioner Shinn presented a check to the NJDWSC on October 30th to commemorate the occasion, he noted that the 71-mile long Passaic River connects WMAs 3, 4 and 6. The ceremony was held at the NJDWSC headquarters in Wanaque. Over 50 watershed partners attended the check presentation ceremony and witnessed the Commissioner and Chairman Coyle of the NJDWSC sign the grant agreement. Watershed maps were on display to further acquaint our partners with their watershed home.

You Are Cordially Invited -

All watershed stakeholders will receive an invitation to the first PAC kickoff meeting for WMAs 3 and 4 to be held this November. Information on the WMA 5 kickoff meeting will be forthcoming early this Winter while the WMA 6 Project Advisory Committee will continue to meet the 4th Monday of every month to work towards accomplishing the above deliverables, in coordination with NJDWSC. The end result of the 4-year watershed management process will be the development of a watershed management area plan for WMAs 3, 4, 5 and 6.

All watershed partners for the Northeast Region will continue to be updated on all upcoming watershed events through mailings and DWM's web page www.state.nj.us/dep/watershedmgt and may contact Danielle Donkersloot, Education and Outreach Coordinator for the Northeast Bureau at (609) 633-9241 for additional information.



Danielle Donkersloot, Division of Watershed Management Northeast Bureau Outreach Coordinator, helps explain the northeast watersheds to interested citizens.

DEP Commissioner Bob Shinn demonstrates the impact of nonpoint source in a watershed during the contract signing for the Upper Delaware Watershed Management Area. The North Jersey Resource Conservation and Development Council received a two year contract to develop a comprehensive management plan for the area. Jill Peach, of the Division of Watershed Management, assists Commissioner Shinn.

